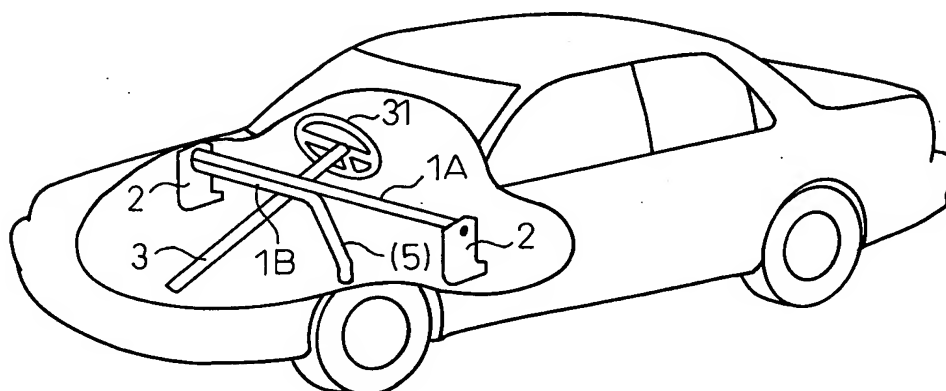


1/
13

Fig.1





3
/ 13

Fig.3

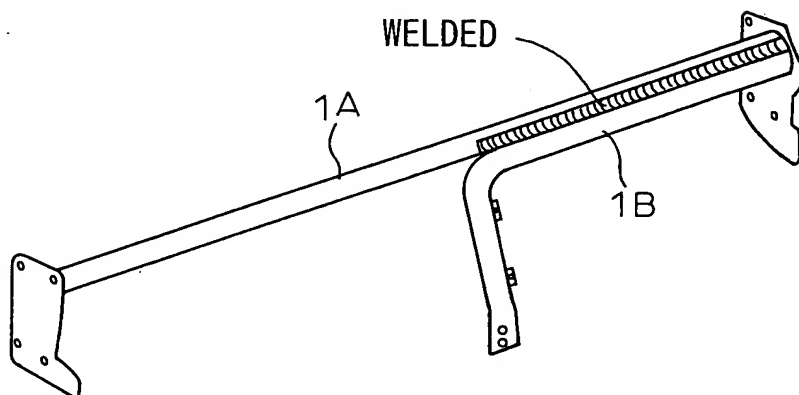
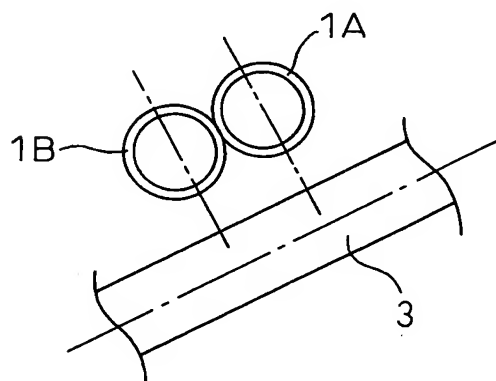
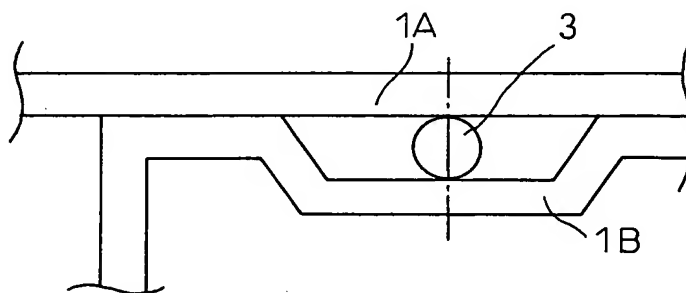
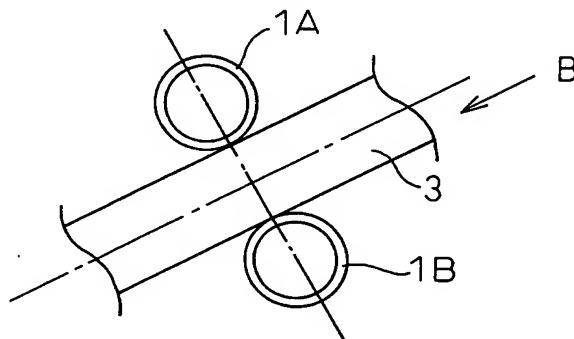


Fig.4



4/13

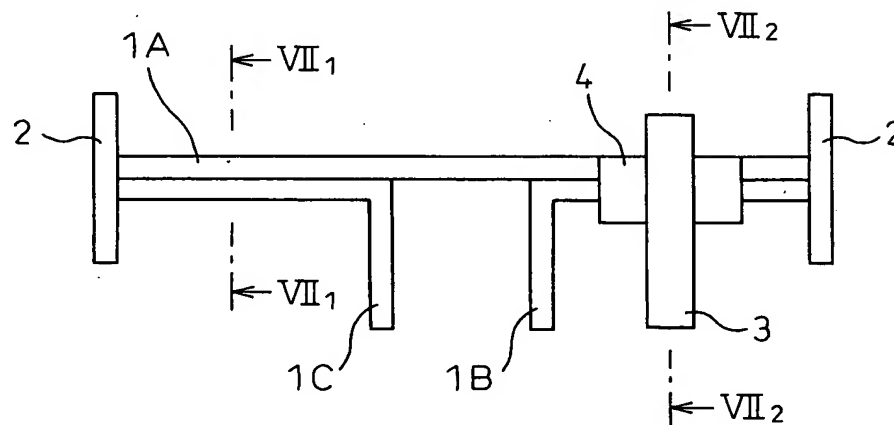
Fig.5



VIEW ALONG ARROW B

5/
13

Fig.6



6/13

Fig.7A

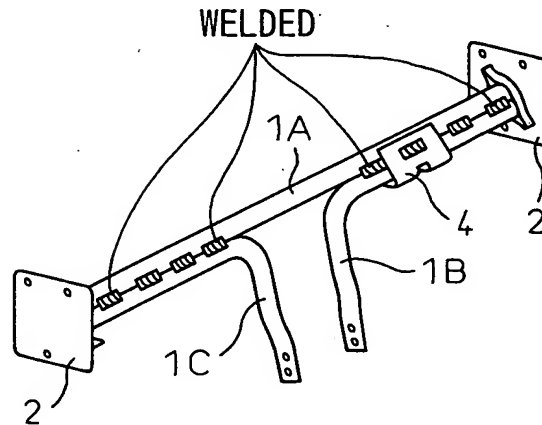
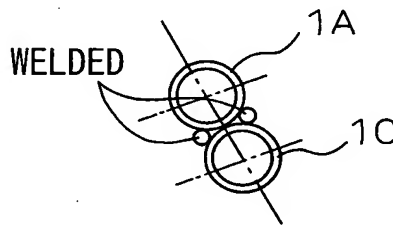
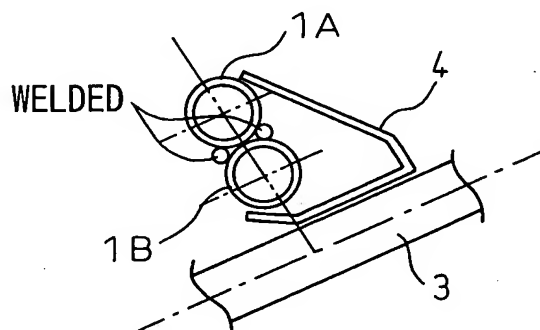


Fig.7B



SECTIONAL VIEW ALONG VII₁-VII₁

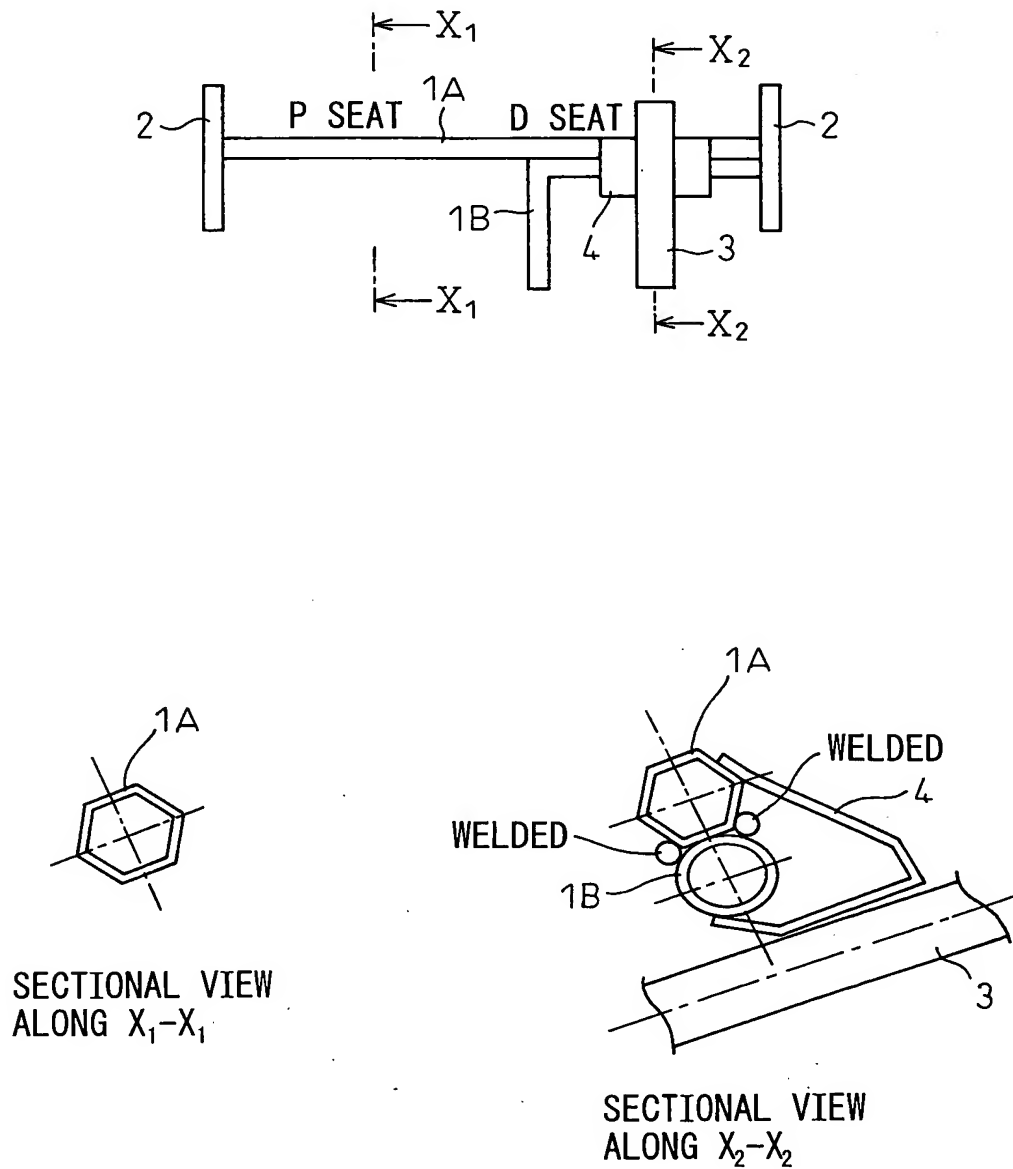
Fig.7C



SECTIONAL VIEW ALONG VII₂-VII₂

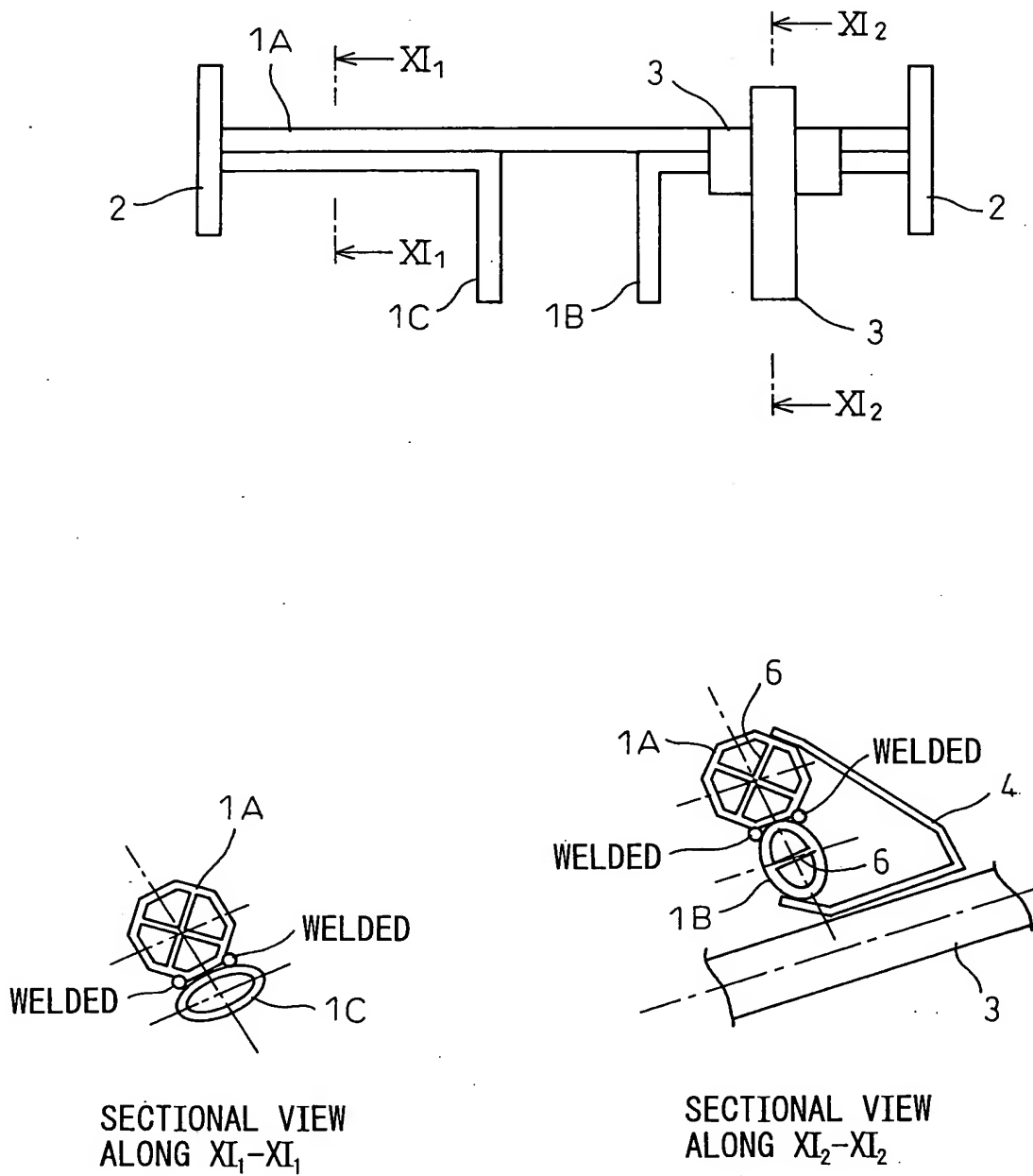
8/13

Fig.10



9/13

Fig.11



10/13

Fig.12A

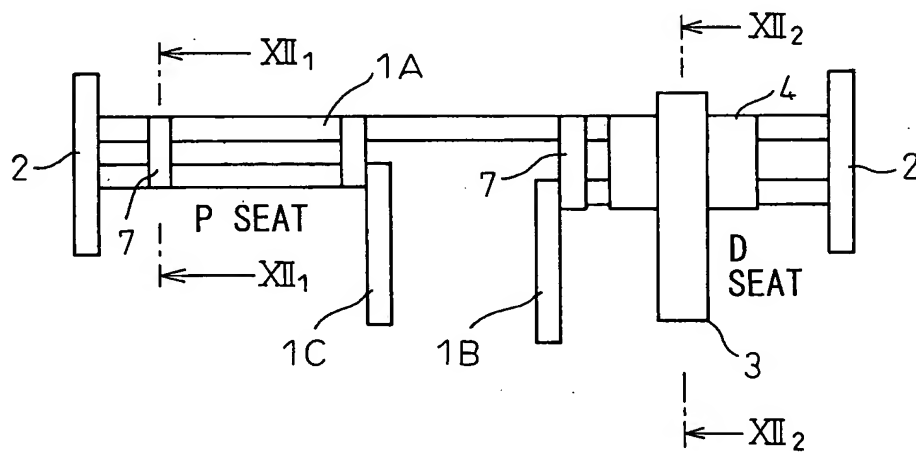
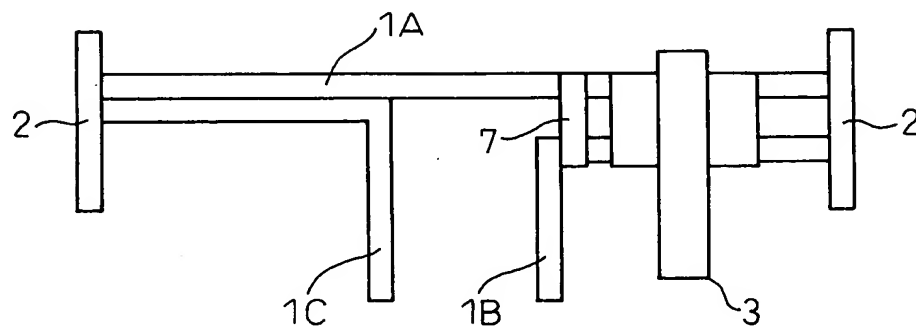


Fig.12B



11
13

Fig.13A

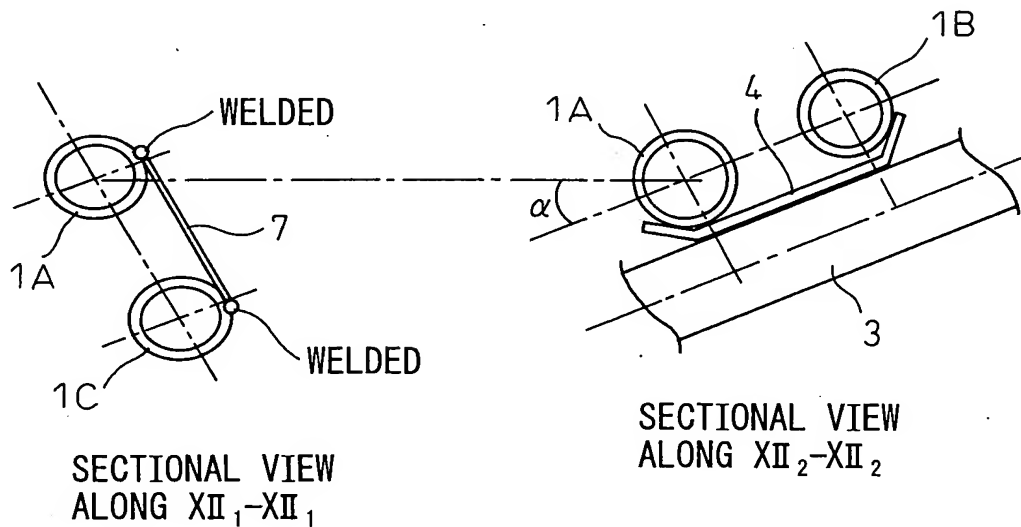
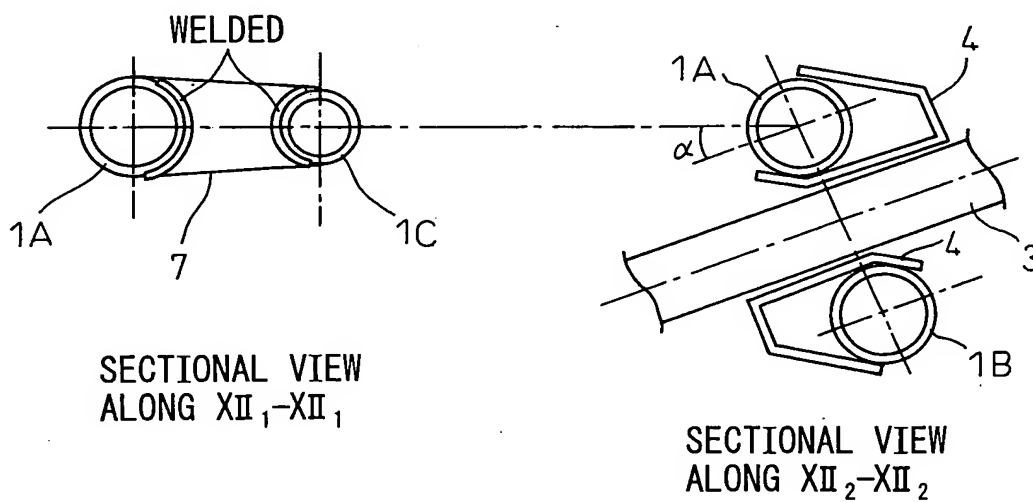


Fig.13B



12/13

Fig.14

• WEIGHT AND AREA COMPARISON [mm]

	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
CCB	Fe PIPE OF Φ54, t1.6	Fe PIPE OF Φ38.1, t1.2	Fe PIPE OF Φ38.1, t1.0
BRACE	t 1.2	-	-

<WEIGHT EFFICIENCY> [kg]

WEIGHT	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
CCB	2.80	1.48	1.25
BRACE	0.47	0.94	1.50
SUM	3.27	2.42	2.75

*WEIGHT CALCULATED FROM 3D MODEL.
BRACE WEIGHT OF 2- AND 3-PIPE CCBs
REPRESENTED BY L-SHAPED LOWER CCB WEIGHT

<SECTIONAL AREA> [mm²]

SECTIONAL AREA	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
CENTRAL PORTION	9,161	4,560	←
D SEAT PORTION	9,161	9,120	←
P SEAT PORTION	9,161	4,560	9,120

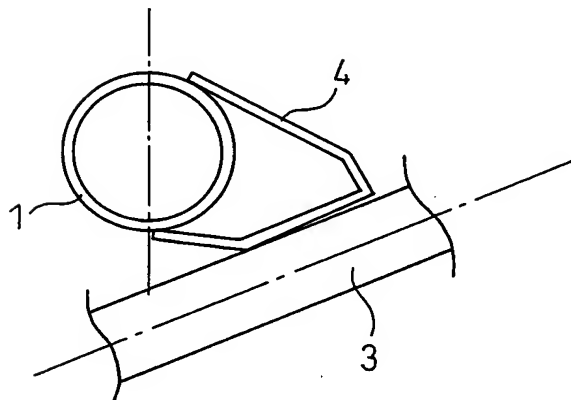
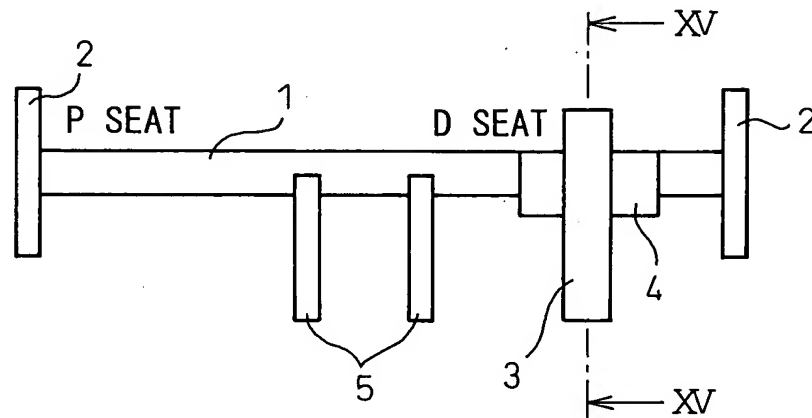
• COMPARISON OF DEFORMATION STRENGTH ANALYSIS
(REACTION AGAINST CCB 20mm INDICATED BY INDEX)

	CONVENTIONAL CCB	2-PIPE CCB	3-PIPE CCB
D SEAT PORTION	100	100	105
P SEAT PORTION	100	55	105

13/13

Fig.15

PRIOR ART



SECTION ALONG XV-XV